Introduction: Elmhurst Hospital's Commitment to Geriatric Care

NYC Health + Hospitals/Elmhurst, a 545-bed Level 1 Trauma and Academic Medical Center with over a million patient visits each year, serves as a critical healthcare provider to a diverse and vibrant community. Located in Queens, one of New York City's most multicultural boroughs, Elmhurst Hospital is committed to addressing the healthcare needs of its underserved population. With its reputation for providing comprehensive care, the hospital stands out for its specialized services in the geriatric unit, where it caters to the unique needs of the elderly population. As the aging population continues to grow, the demand for geriatric services increases, and Elmhurst continually adapts its approach to meet the evolving challenges faced by elderly patients, particularly in the intensive care unit (ICU).

Demographic Profile of the Population Served

Elmhurst/Corona, a densely populated neighborhood in Queens, New York, is home to over 160,000 residents. This area is characterized by a rich ethnic diversity: 33.8% of residents are Asian, 49.6% are Hispanic, 8.1% are Black, and 6.7% are White[[1]](#endnote-1).This cultural richness underscores the importance of **culturally sensitive healthcare**, particularly in addressing health disparities like pneumococcal pneumonia (PNA) vaccination rates among the elderly. Economically, the neighborhood faces challenges, with a median household income of $66,480, lower than the citywide average. Approximately 17.9% of residents live in poverty, and 31.3% of renters experience severe rent burdens, spending more than half of their income on housing. These financial stresses limit access to healthcare and increase vulnerability to infections, including pneumonia, which disproportionately affects the elderly[[2]](#footnote-1)

Pneumococcal pneumonia is a leading cause of hospitalization and death among older adults. Given the higher incidence of respiratory infections in this population, the PNA vaccine is essential to prevent severe complications[[3]](#endnote-2). However, barriers such as language differences, low health literacy, and economic strain in this immigrant-heavy community often hinder vaccine uptake. Targeted public health interventions and culturally appropriate outreach are crucial to improving vaccination rates, thereby reducing the risk of pneumonia and other preventable diseases. Addressing these disparities is vital to improving ICU care and health outcomes for this vulnerable population at Elmhurst Hospital.

Why Pneumococcal Pneumonia (PNA) is a Risk for the Elderly

Pneumococcal pneumonia continues to pose a significant health risk to older adults, particularly those with chronic conditions such as COPD, asthma, diabetes, heart disease, or those who smoke. These individuals are more likely to experience severe illness, hospitalization, and death due to pneumococcal disease. The risk is heightened by factors such as weakened immune function, the presence of multiple comorbidities, and the potential for prolonged ICU stays, which increase their susceptibility to infections and negatively impact recovery outcomes[[4]](#endnote-3). Pneumococcus bacteria, the cause of PNA, are typically spread through respiratory droplets and can lead to pneumonia, sepsis, and meningitis[[5]](#endnote-4). Given the fragility of elderly patients and their diminished ability to mount a strong immune response, pneumococcal infections can escalate quickly, necessitating long-term care in intensive settings.

Older adults who develop respiratory infections, including pneumonia, are at a higher risk for severe complications such as acute respiratory failure and organ dysfunction. These complications often result in extended ICU stays and significantly increased treatment costs[[6]](#endnote-5)

Here, preventive measures such as the pneumococcal vaccine can make a significant difference in reducing hospitalizations and improving patient outcomes.

The Role of the B6 Unit Department

Elmhurst’s Geriatric Department, particularly in the B6 unit, plays a critical role in managing elderly patients with specialized needs. The B6 unit is designed to address the complex challenges that elderly patients face, from cognitive impairments like dementia to the physical decline associated with aging. Many patients in this department have multiple chronic conditions, increasing their susceptibility to infections such as pneumonia.

The B6 team includes geriatricians, nurses, respiratory therapists, and social workers, all working together to provide **holistic care**. Given the weakened immune systems and increased frailty of elderly patients, the B6 unit places a strong emphasis on infection prevention strategies, including vaccination, to reduce the risk of hospital-acquired infections. Pneumococcal vaccination is a key component of this prevention effort.

What Can Be Done to Improve?

In June 2024, we launched a focused initiative to address the low pneumococcal (PNA) vaccine uptake among patients in the B6 unit. Prior to this, there were fluctuations in vaccine administration, including a noticeable dip in September 2023 when no vaccines were given. One possible cause for this drop could be the flu season, as the focus on influenza vaccination may have diverted attention from pneumococcal vaccinations. We identified several key barriers contributing to the low uptake: inefficiencies in the vaccine ordering process, delays in vaccine administration, and a lack of communication and education about the importance of the PNA vaccine.

To address these challenges, we collaborated closely with both medical and nursing staff to implement several targeted interventions. For the nursing team, we revised the discharge workflow to ensure that the PNA vaccine was reviewed and administered as part of the discharge process. Nurses now verify that all necessary vaccinations, including the PNA vaccine, are checked before discharging patients. If the vaccine has not been given during the patient’s stay, it is now administered just before discharge, effectively reducing missed opportunities.

For physicians, we integrated reminder systems into the electronic medical records (EMR), prompting staff to review and administer the PNA vaccine as part of routine care. A challenge we faced was the difficulty in accessing external vaccine records, as they were not well-integrated into the EMR. To overcome this, we trained staff to efficiently gather and input vaccination data, ensuring a complete and accurate vaccination history for each patient. Additionally, we developed educational materials that covered the various variants of the PNA vaccine and the appropriate administration protocols for each. This educational initiative aimed to increase staff awareness and improve adherence to vaccination protocols.

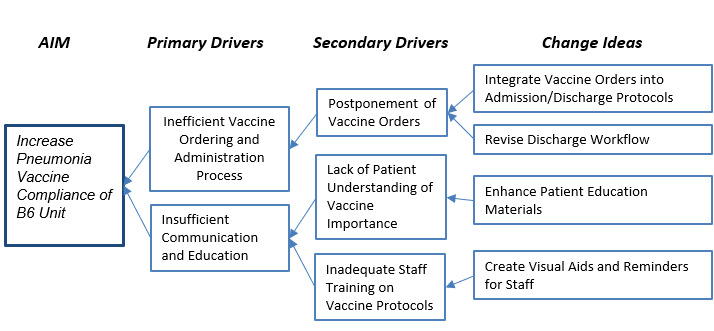


Figure 1: Fishbone diagram of interventions to increase PNA Vaccine compliance

The results of these changes were clear. Between June 2024 and October 2024, 30 pneumococcal vaccines were administered, compared to just 21 vaccines given from January to May 2024. This represents a 42.8% increase in vaccine administration after the initiative was launched. The improvement demonstrates that our efforts to streamline processes, enhance communication, and educate staff were effective. The revised discharge workflow, integrated reminder systems, and educational campaigns not only increased the number of vaccines administered but also improved consistency in ensuring that patients received the PNA vaccine before leaving the hospital.

This highlights the importance of cross-departmental collaboration and process refinement in improving patient care and outcomes. By addressing the root causes of low vaccine uptake and implementing targeted interventions, we have seen a positive and sustained increase in pneumococcal vaccine administration, ultimately benefiting patient health

Figure 2: Total PNA Vaccines give in B6 Unit from Jan 2023 to Oct 2024

Challenges and Limitations

Despite ongoing efforts to increase pneumococcal vaccination rates for elderly patients in the B6 unit, significant barriers remain. One primary challenge is vaccine hesitancy, especially within immigrant populations, where patient refusal is commonly reported. In addition, healthcare providers, particularly hospital doctors, face difficulties in prioritizing vaccinations due to competing responsibilities and lack of access to vaccination guidelines, further complicating vaccination efforts[[7]](#endnote-6). Cultural and historical mistrust of medical interventions can affect vaccine acceptance, requiring targeted outreach and education to address these concerns. **Culturally tailored health communication** has proven vital, and the importance of **building trust with immigrant populations** cannot be overstated[[8]](#endnote-7). Logistical issues, such as the limited availability of vaccination sites and the complexity of coordinating vaccine administration for critically ill patients, present significant barriers to vaccination. For example, the administration of the PNA vaccine may be delayed due to the acute condition of patients when they arrive at the ICU, which aligns with some of the structural challenges identified in healthcare systems[[9]](#endnote-8).

Another limitation is the difficulty in accessing accurate vaccine records. Many patients come to Elmhurst without a comprehensive medical history integrated into the hospital’s system. Although we have made strides in consolidating this data, the challenge of consistently tracking and updating vaccination records remains, especially when patients have received care outside of Elmhurst Hospital and those without health insurance.

Finally, financial constraints and competing priorities in a high-demand, **resource-limited hospital** environment can limit the resources allocated to vaccine administration programs. Despite these challenges, continued collaboration, improved workflows, and targeted education will be crucial in enhancing pneumococcal vaccination rates and improving patient outcomes.

Conclusion

Elmhurst Hospital’s commitment to serving a diverse and aging population in its ICU highlights the importance of continuous innovation in care practices. Pneumococcal vaccination presents a simple yet highly effective tool in reducing the burden of pneumonia among elderly patients. As we continue to advocate for preventive strategies and improved healthcare delivery, the insights and experiences of healthcare workers particularly those of interns and frontline staff will help shape the future of care in this critical area.

By focusing on **innovative, cost-effective strategies** such as revising workflows, enhancing EMR systems, and integrating community outreach, hospitals in **resource-limited settings** can improve care for their elderly populations. Elmhurst’s approach, which incorporates **multidisciplinary collaboration**, **culturally competent healthcare**, and **education-driven interventions**, has already led to measurable improvements in pneumococcal vaccination rates. As we continue to refine these strategies, **ongoing collaboration, education, and commitment** will be key to improving vaccination rates, reducing pneumonia-related complications, and enhancing the quality of life for elderly patients.

With these efforts, Elmhurst Hospital serves as a model for other institutions looking to tackle **vaccine hesitancy**, **logistical challenges**, and **resource limitations** while delivering effective, compassionate care to a vulnerable population.

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